REMARKS

Upon entry of this Reply, claims 1-15 will remain in this application. Claim 16 has been canceled. Reconsideration of the application is requested.

Reconsideration and withdrawal of the drawing objections set forth in sections 3-6 of the Office Action will be in order after approval of the proposed drawing changes submitted together with this Reply.

Claims 8, 9, and 15 have been amended after consideration of the comments provided by the Examiner in sections 9-11 on page 4 of the Office Action. Claim 16 has been canceled as noted above. It is respectfully submitted that all of the claims remaining in this application now fully comply with the requirements of 35 U.S.C. §112, second paragraph.

Claims 1-7 and 9-14 were rejected as being unpatentable over the known carbon panel devices discussed on pages 2-3 of the substitute specification in view of U.S. Patent 4,467,836 to Ragout and U.S. Patent 4,895,185 to Champleboux et al. Claims 8 and 15 were rejected based on the same items and further in view of U.S. Patent 5,937,606 to Meier et al. Reconsideration is requested.

Neither the Champleboux et al. patent nor the Ragout patent relates to the subject matter of either the present invention or the carbon panels discussed on pages 2-3 of the substitute specification of this application. Both of the patents relied on show elements with reinforcement layers split at their ends. The reinforcement layers of the patents relied on, however, are of metal cables and are not made of carbon panels. The Ragout patent, for example, describes each ply 14 as being made up of parallel flexible metal cables, preferably made of steel. The Ragout patent, moreover, is referred to as "the principle patent" in the Champleboux et al. patent disclosure (see, for example, lines 3-5 in column 1 and lines 4-6 in column 3). Both patent documents relied on relate to reinforcing hollow tubes by reinforcing elements which are only stressed by stretching forces.

The reinforcing structure of the present invention, by contrast, is formed by carbon fibers in the form of a CFK panel. In such a panel, the carbon fibers are integrated in a rigid matrix of high stress resistance. The matrix is important for the function of the CFK panel, as it transfers stress between the fibers, especially in the presence of local defects in the fibers. Splitting such a CFK panel is crucial and implements a high risk of damaging or breaking the fibers. For this reason, a person skilled in the art would not rely on a technique such

as that of either the Ragout disclosure or the Champleboux et al. disclosure, i.e. the well known technique of splitting metal elements such as cables or metal layers. It is not known, and it would not have been obvious, to split an end of a CFK panel as each of the independent claims of the present application defines.

Another difference between the present invention and the reinforcing elements of the Ragout and the Champleboux et al. disclosures is that the CFK panels of the present invention are held at their ends and glued onto the surface to be reinforced along the whole length of the reinforcing element. This is reflected in certain claims, e.g. claims 11-13, of the present application.

U.S. Patent 5,937,606 to Meier et al. discloses the use of a wedge 23 in connection with an unsplit panel. The wedge, therefore, turns away the panel from the base surface, but does not serve as an end element, such as that of the present invention, which receives split ends of a CFK panel.

It is respectfully submitted that independent claims 1, 3, 4, 7, and 11-13 as they presently appear in this application are patentable. The remaining claims of this application are dependent claims and are patentable as well.

This application is now in condition for allowance. Should the Examiner have any questions after considering this Reply, the Examiner is invited to telephone the undersigned attorney.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In each paragraph and claim appearing below, deletions are bracketed and additions are underlined.

Amendments to the paragraphs appearing on page 8 of the substitute specification:

--Figure 4 shows a cross section through a beam 1 with a reinforcing device according to the invention mounted on the underside (tension side), consisting of a CFK panel 2 with anchor heads [12] 3 and [13] 4 attached to the ends. Anchor heads [12] 3 and [13] 4 are so designed that the CFK panel 2 emerges practically at the level of adhesive layer 5 from the anchor heads [12] 3 and [13] 4 and the latter, therefore, must not be depressed in the underside of beam 1 but must also be glued flush to the underside. Of course, the transverse tensioning devices 6 shown in Figure 1 can also be mounted here to produce a higher pressure and thus a higher tensile strength of the connection between anchor heads [12] 3 and [13] 4 and the underside of the beam. Likewise, these anchor heads [12] 3 and [13] 4, like the embodiment already described above, can be pretensioned simply.

Figure 5 shows a cross section through an anchor head [12] 3 and the corresponding arrangement of the holding slots 9. The bottom slot 9' is parallel to the outside wall [12'] 3' of the anchor head [12] 3, resting on beam 1, and the other slots 9 are located at an acute angle pointing outward in the form of a fan. This arrangement offers the same advantages as already described as a result of the increase in the gluing surface of the CFK panel 2 and also allows the flush application of anchor heads [12] 3 and [13] 4 as well without additional recesses in beam 1. These anchor heads [12] 3 and [13] 4 also have transverse reinforcing means 11, as shown schematically in Figure 2, to avoid bending or tearing of anchor heads [12] 3 and [13] 4 in the area where the CFK panel 2 emerges.

As material for the anchor heads 3, 4 [and 12, 13], metal which exhibits high strength, ease of machining, and good force initiation properties is suitable, as is plastic, especially when corrosion is expected to be high.--

Amendments to claims 8, 9, and 15:

8. (Twice amended) Reinforcing device according to Claim 1 wherein the end element in the vicinity of the outlet

of the carbon panel has [reinforcing devices] at least one transverse reinforcement located transversely to an outlet direction.

9. (Twice amended) Reinforcing device according to Claim 1 wherein the end element has a [force-introduction point] threaded bore opposite the outlet of the carbon panel.

15. (Amended) Reinforcing device according to Claim 8, wherein the [reinforcing devices are] at least one transverse reinforcement is a threaded [bolts] rod.